

'BIOSPHERE LIVING' LIGHTING



Diurnal species such as bees, butterflies, songbirds, tortoises, rock hyrax (dassies) and baboons are primarily awake during the day and sleep at night.

Nocturnal species such as moths and other insects, geckos, frogs, owls, porcupines and leopards sleep during the day and move about at night.



Light Pollution is the human-made alteration of outdoor light levels from those occurring naturally.

Have you sat outside and enjoyed the wonderful stargazing opportunities in our villages in the Kogelberg Biosphere Reserve? Besides the impact on our wildlife, light pollution significantly alters the aesthetic beauty of our night-time surroundings.

WHY IS ECO-FRIENDLY LIGHTING IMPORTANT ?

"Scientific evidence suggests that artificial light at night has negative and deadly effects on many creatures including amphibians, birds, mammals, insects and plants." Light pollution harms wildlife and ecosystems | DarkSky International. Animals and plants are genetically adapted to day/night and seasonal cycles. These can be disrupted by artificial light at night which turns the "night into day".

Artificial light at night affects both diurnal and nocturnal species, but in different ways. It interrupts behaviours such as reproduction, feeding, sleep and protection from predators. Artificial light:

- **Repels:** it equates to a loss in habitat as more light encroaches on fewer remaining dark areas where they can live safely.
- **Attracts:** concentrates creatures as a food source or a trap that kills them.
- **Interferes with day/night patterns:** creatures do not get sufficient sleep and their reproductive cycles may be affected.

Some examples:

Frogs

The glare from artificial lights can affect our wetlands and negatively impact on the growth and population of the frogs that live there. This light can affect their calling which impacts their breeding behaviour. Artificial light also affects frog life cycles, such as delaying metamorphosis of tadpoles.



Birds



Birds that migrate at night use the moon and starlight for orientation. Artificial light that obscures these features can cause them to migrate too early or too late thereby missing ideal climatic conditions for nesting, foraging and other behaviours. They may also collide into buildings, transmission lines or the artificial light source.

Insects

Artificial lighting fixtures create a deadly appeal for insects. It also disrupts their feeding, breeding and movement patterns. This may negatively affect all species of animals or plants that rely upon insects as food or for pollination.

Other animals

For small, nocturnal, herbivorous mammals, artificial light at night increases their risk of being killed by a predator and decreases food consumption. Porcupines may also be impacted by these night lights.



WHAT CAN YOU DO TO REDUCE THE LIGHT POLLUTION FROM YOUR HOME ?

As the coastal conservancy villages of Betty's Bay, Pringle Bay and Rooiels do not have streetlights, the main source of light pollution at night comes from houses and businesses.

Assess your indoor and outdoor lighting

- **Indoor lighting:** Switch off unnecessary lights and save on electricity costs. Close your curtains or blinds at night time.
- **Outdoor lighting:** Strong lighting not only creates glare and light pollution but also wastes energy and money. It negatively impacts the wildlife and your neighbours.

Use outdoor lighting fixtures that shade the light source to minimize glare and light trespass:

1. **Design of lampshade:** Install lampshades that are shielded and shine down and not up or outwards towards the street or your neighbours. Downlights are preferred. Use motion sensors and timers so your lights are off when they are not needed.

2. Type of light bulb:

- Type: Use LED bulbs
 - Colour temperature (Kelvin):
 - Avoid higher colour temperatures which have more blue light i.e. 5000K or more (shorter wavelength)
 - Use lower colour temperatures i.e. warm white coloured light of 3000k or less (longer wavelength)
 - Power: The amount of power consumed by the bulb is measured in watts
 - Use a maximum of 8 watts: generally a 5-6 watt LED lamp is sufficient.
 - Brightness: The total amount of light emitted by the bulb is measured in lumens
 - Use lower lumens for lower brightness.
3. **Position:** Install lights at a maximum height of 2.1 meters (standard door height).
 4. **Quantity:** Not more than two per elevation of house.



Bad types of external lighting that shine light upwards and outwards:

No canopy to shield or direct light downwards



Unshielded lights

Incorrect angle



Good types of external lighting that shine light downwards:

Downlights



Solar

Angled down



Biosphere Living - Our Lifestyle Choice

Preserve our natural night sky and the night environment for our wildlife and neighbours :

- Use minimal light, only when and where it's needed to create a balance between safety and starlight.
- Use **fewer, low mounted, shielded, long wavelength** (warm colours) lights and use **motion sensors**.

Consult DarkSky International for more information <https://darksky.org/>

"Every day do one small act for biodiversity"
Craig Foster's message to BBC at the 2022 AGM

